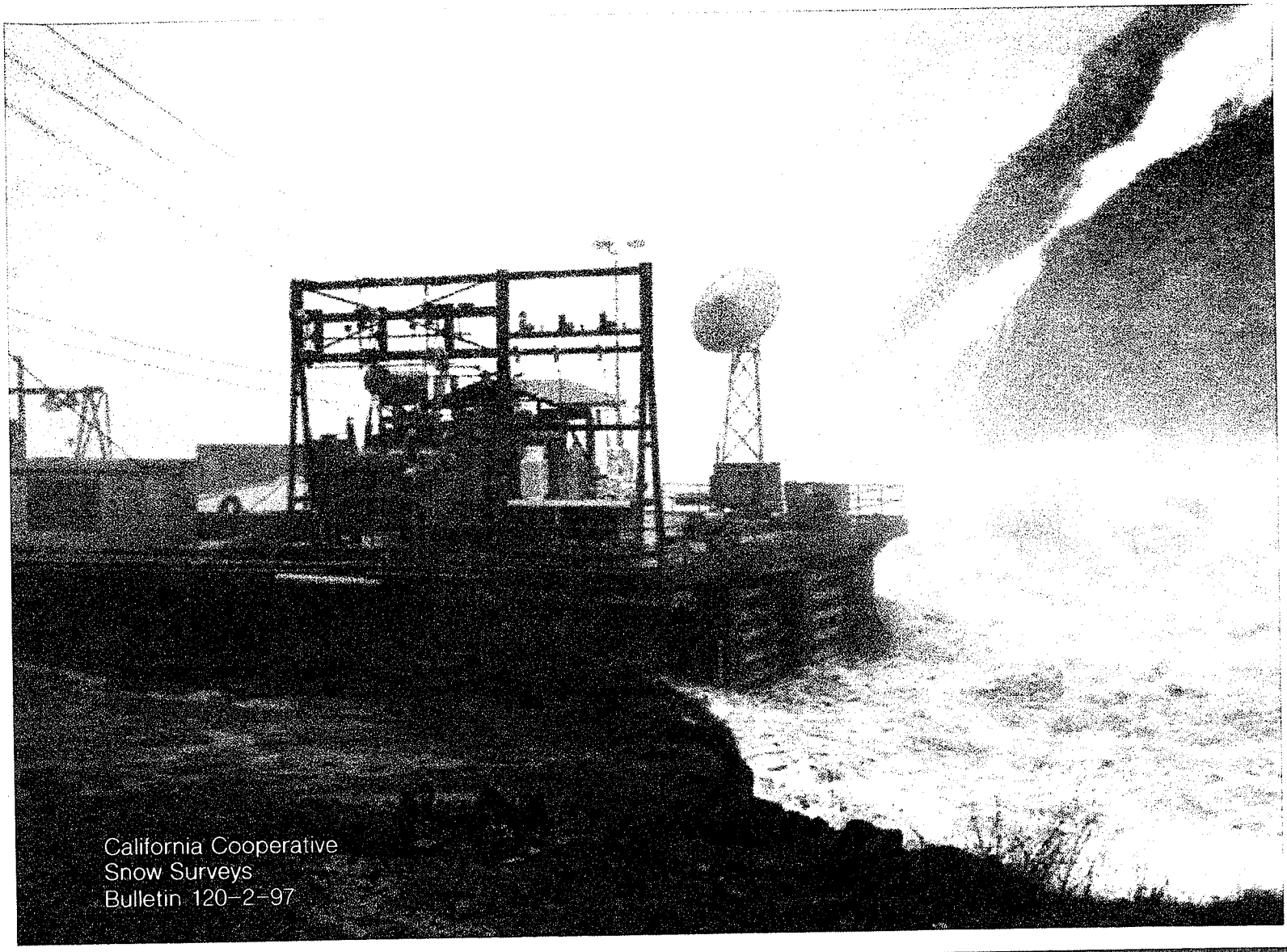


California Cooperative
Snow Surveys
Bulletin 120-2-97

State of California
The Resources Agency

Department of
Water Resources

Water Conditions in California

Report 2 March 1, 1997

Pete Wilson
Governor
State of California

Douglas P. Wheeler
Secretary for Resources
The Resources Agency

David N. Kennedy
Director
Department of Water Resources

STATE OF CALIFORNIA
Pete Wilson, Governor

THE RESOURCES AGENCY
Douglas P. Wheeler, Secretary for Resources

Department of Water Resources
David N. Kennedy, Director

Stephen L. Kashiwada
Deputy Director

Robert G. Potter
Chief Deputy Director

Raymond D. Har
Deputy Director

L. Lucinda Chipponeri
Assistant Director for Legislation

Susan N. Weber
Chief Counsel

Division of Flood Management

George T. Qualley . . . . . Chief
Maurice Roos . . . . . Chief Hydrologist
Gary Hester . . . . . Chief Forecaster

Prepared by

Frank Gehrke . . . . . Chief, Snow Surveys
Robert R. Newton . . . . . Associate Engineer,W.R.
J. Pierre Stevens . . . . . Associate Engineer, W.R.
David M. Hart . . . . . Water Resources Engineering Associate
Dudley E. McFadden . . . . . Assistant Engineer, W.R.
Shawn T. Perkins . . . . . Water Resources Technician II

COOPERATING AGENCIES

Public Agencies
Buena Vista Water Storage District
Central California Irrigation District
East Bay Municipal Utility District
Friant Water Users Association
Kaweah Delta Water Conservation District
Kern Delta Water District
Kings River Conservation District
Lower Tule River Irrigation District
Merced Irrigation District
Modesto Irrigation District
Nevada Irrigation District
North Kern Water Storage District
Northern California Power Agency
Oakdale Irrigation District
Omochumne-Hartnell Water District
Oroville-Wyandotte Irrigation District
Placer County Water Agency
Sacramento Municipal Utility District
South San Joaquin Irrigation District
Tri-Dam Project
Tulare Lake Basin Water Storage District
Turlock Irrigation District
Yuba County Water Agency

Private Organizations
J.G. Boswell Company
Kaweah River Association
Kings River Water Association
St. Johns River Association
Tule River Association
State Water Contractors

Municipalities
City of Bakersfield Water Department
City of Los Angeles Department of Water and Power
City and County of San Francisco Hetch Hetchy Water and Power

State Agencies
California Department of Forestry & Fire Protection
California Department of Water Resources

Public Utilities
Pacific Gas and Electric Company
Southern California Edison Company

Federal Agencies
U.S. Department of Agriculture
Forest Service (14 National Forests)
Pacific Southwest Forest and Range Experiment Station
Natural Resource Conservation Service
U.S. Department of Commerce
National Weather Service
U.S. Department of Interior
Bureau of Reclamation
Geological Survey, Water Resources
National Park Service (3 National Parks)
U.S. Department of Army
Corps of Engineers

Other Cooperative Programs
Nevada Cooperative Snow Surveys
Oregon Cooperative Snow Surveys

Summary of Water Conditions
March 1, 1997

In a reversal so typical of California climate, February was dry with precipitation in the lowest 10 percent of the historical record. Snowpack water content in the mountains changed little during the month. Water supply prospects remain excellent because of the generally good snowpack and much above normal reservoir storage.

Forecasts of runoff for the April through July period have been reduced because of the dry February but are still above average overall at 125 percent. Snowmelt runoff percentages are higher in the south, less in the north even below average in the far north. Water year runoff percentages are much higher at 170 percent because of runoff which has occurred during this winter's floods.

Snowpack water content is about 115 percent of average statewide for this date and 100 percent of the average for April 1, the normal maximum accumulation. Last year the March 1 pack was average. Snowpack percentages remain much above average in the southern Sierra.

Precipitation during February was only about 20 percent of average statewide, one of the driest in the record. However, precipitation since October 1 is 145 percent of average. Last year seasonal precipitation was 115 percent at this time.

Runoff so far this season is 230 percent of average, nearly double the 120 percent last year. February runoff was about 90 percent of average, down dramatically from January. Estimated runoff during February of the 8 major rivers of the Sacramento and San Joaquin River hydrologic regions was 2.8 million acre-feet.

Reservoir storage continues to be excellent at 120 percent of average. Actual volume is down 2.4 MAF from last month because of restoring flood control space in the big multi-purpose reservoirs. Total storage last year was 125 percent of average.

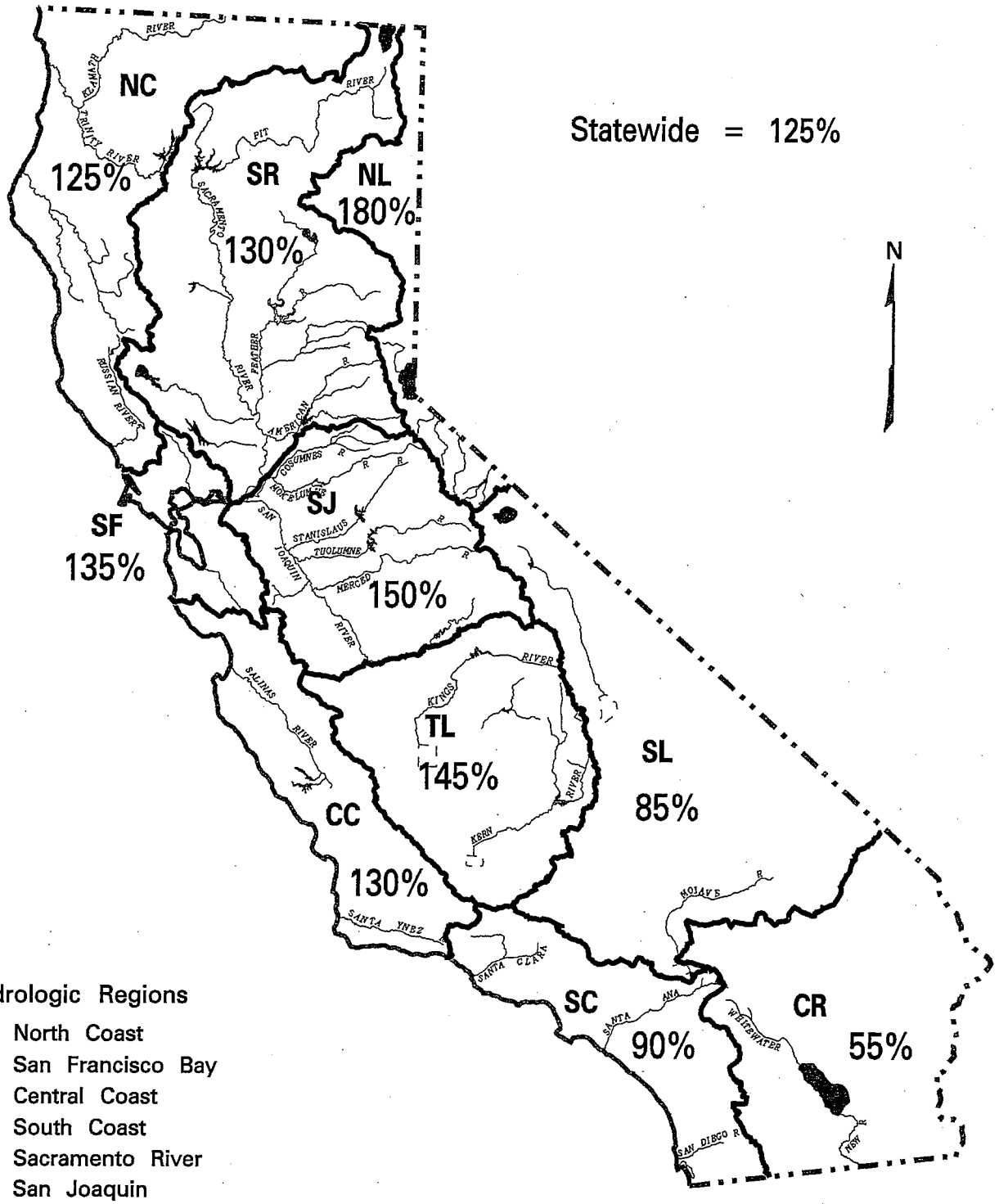
SUMMARY OF WATER CONDITIONS
IN PERCENT OF AVERAGE

HYDROLOGIC REGION	PRECIPITATION OCTOBER 1 TO DATE	MARCH 1 SNOW WATER CONTENT	MARCH 1 RESERVOIR STORAGE	RUNOFF OCTOBER 1 TO DATE	APR-JULY RUNOFF FORECAST	WATER YEAR RUNOFF FORECAST
NORTH COAST	135	65	110	190	70	130
SAN FRANCISCO BAY	150	--	120	200	--	--
CENTRAL COAST	150	--	115	250	--	--
SOUTH COAST	115	--	120	110	--	--
SACRAMENTO RIVER	150	85	110	220	105	160
SAN JOAQUIN RIVER	180	140	130	380	145	200
TULARE LAKE	175	150	165	360	165	205
NORTH LAHONTAN	205	145	155	340	155	150
SOUTH LAHONTAN	105	170	80	130	155	150
COLORADO RIVER-DESERT	65	---	---	---	---	---
STATEWIDE	**145**	**115**	**120**	**230**	**125**	**170**

SEASONAL PRECIPITATION

IN PERCENT OF AVERAGE TO DATE

October 1, 1996 through March 31, 1997



Hydrologic Regions

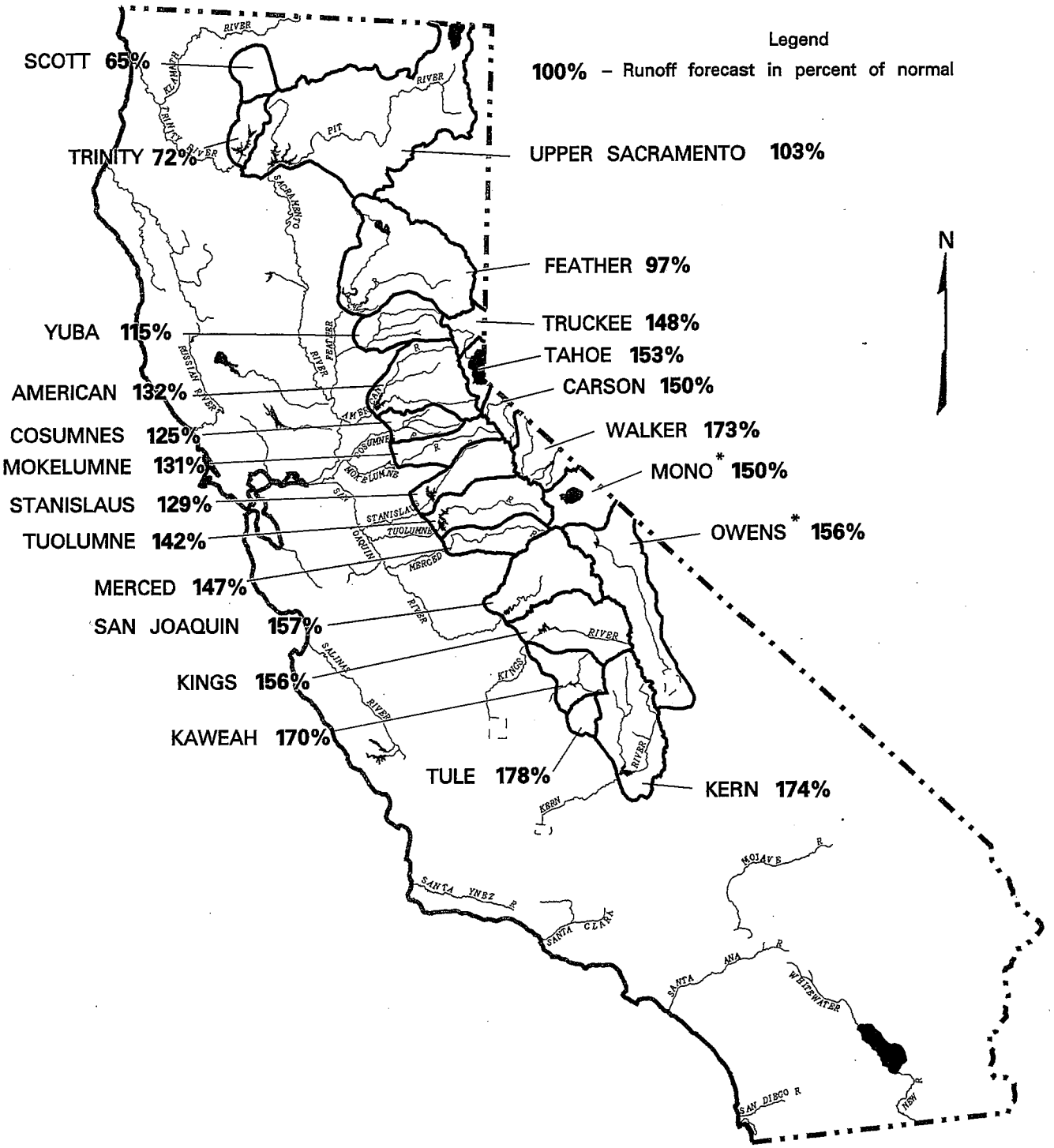
NC – North Coast
SF – San Francisco Bay
CC – Central Coast
SC – South Coast
SR – Sacramento River
SJ – San Joaquin
TL – Tulare Lake
NL – North Lahontan
SL – South Lahontan
CR – Colorado River–Desert

WATER YEAR IS OCTOBER 1 THROUGH SEPTEMBER 30

FORECAST OF APRIL – JULY

UNIMPAIRED SNOWMELT RUNOFF

March 1, 1997



* FORECAST BY DEPARTMENT OF WATER AND POWER, CITY OF LOS ANGELES

APRIL 1, 1997 FORECASTS
APRIL-JULY UNIMPAIRED RUNOFF

HYDROLOGIC REGION and Watershed	Unimpaired Runoff in 1,000 Acre-Feet (1)					
	HISTORICAL			FORECASTS		
	50 Yr Avg (2)	Max of Record	Min of Record	Apr-Jul Forecasts	Pct of Avg	80 % Probability Range (1)
SACRAMENTO RIVER						
Upper Sacramento River						
Sacramento River at Shasta Lake (3)	297	702	39	160	54%	
McCloud River at Shasta Lake	392	850	185	330	84%	
Pit River at Shasta Lake	1,056	1,796	480	1,020	97%	
Total Inflow to Shasta Lake	1,801	3,189	726	1,650	92%	1,260 - 2,350
Sacramento River above Bend Bridge, near Red Bluff	2,451	4,674	943	2,030	83%	1,590 - 2,880
Feather River						
Feather River at Lake Almanor near Prattville (3)	333	675	120	250	75%	
North Fork at Pulga (3)	1,028	2,416	243	740	72%	
Middle Fork near Clio (4)	86	518	4	60	70%	
South Fork at Ponderosa Dam (3)	110	267	13	80	73%	
Total Inflow to Oroville Reservoir	1,831	4,676	392	1,320	72%	950 - 2,030
Yuba River						
North Yuba below Goodyears Bar (3)	286	647	51	260	91%	
Inflow to Jackson Mdws and Bowman Reservoirs (3)	112	236	25	100	89%	
South Yuba at Langs Crossing (3)	233	481	57	210	90%	
Yuba River at Smartville	1,029	2,424	200	940	91%	760 - 1,330
American River						
North Fork at North Fork Dam (3)	262	716	43	250	95%	
Middle Fork near Auburn (3)	522	1,406	100	500	96%	
Silver Creek Below Camino Diversion Dam (3)	173	386	37	170	98%	
Total Inflow to Folsom Reservoir	1,261	3,074	229	1,220	97%	1,030 - 1,740
SAN JOAQUIN RIVER						
Cosumnes River at Michigan Bar	128	363	8	110	86%	70 - 180
Mokelumne River						
North Fork near West Point (5)	437	829	104	420	96%	
Total Inflow to Pardee Reservoir	459	1,065	102	460	100%	390 - 600
Stanislaus River						
Middle Fork below Beardsley Dam (3)	334	702	64	330	99%	
North Fork Inflow to McKays Point Dam (3)	224	503	34	220	98%	
Total Inflow to New Melones Reservoir	699	1,710	116	700	100%	540 - 920
Tuolumne River						
Cherry Creek & Eleanor Creek near Hetch Hetchy (3)	322	727	97	340	106%	
Tuolumme River near Hetch Hetchy (3)	606	1,392	153	660	109%	
Total Inflow to New Don Pedro Reservoir	1,184	2,682	301	1,300	110%	1,140 - 1,600
Merced River						
Merced River at Pohono Bridge (3)	362	888	80	410	113%	
Total Inflow to Lake McClure	611	1,587	123	700	115%	610 - 900
San Joaquin River						
San Joaquin River at Mammoth Pool (6)	1,014	2,279	235	1,270	125%	
Big Creek below Huntington Lake (6)	95	264	11	120	126%	
South Fork near Florence Lake (6)	202	511	58	260	129%	
Total Inflow to Millerton Lake	1,212	3,355	262	1,600	132%	1,420 - 1,860
TULARE LAKE						
Kings River						
North Fork Kings River near Cliff Camp (3)	239	565	50	310	130%	
Total Inflow to Pine Flat Reservoir	1,183	3,114	273	1,570	133%	1,400 - 1,800
Kaweah River at Terminus Reservoir	276	814	61	360	130%	310 - 430
Tule River at Success Reservoir	59	256	2	70	119%	55 - 95
Kern River						
Kern River near Kernville (3)	373	1,203	83	500	134%	
Total Inflow to Isabella Reservoir	442	1,657	84	600	136%	540 - 770

(1) See inside back cover for definition
(2) All 50 year averages are based on years 1946-1995 unless otherwise noted
(3) 50 year average based on years 1941-90
(4) 44 year average based on years 1936-79
(5) 36 year average based on years 1936-72
(6) 45 year average based on years 1936-81

MARCH 1, 1997 FORECASTS
WATER YEAR UNIMPAIRED RUNOFF

Unimpaired Runoff in 1,000 Acre-Feet (1)														
HISTORICAL			DISTRIBUTION								FORECASTS			
50 Yr Avg (2)	Max of Record	Min of Record	Oct Thru Jan*	Feb *	Mar	Apr	May	Jun	Jul	Aug & Sep	Water Year Forecasts	Pct of Avg	80 % Probability Range (1)	
856	1,964	165												
1,184	2,353	577												
3,078	5,150	1,484												
5,896	10,796	2,479	4,400	710	870	740	540	340	240	440	8,280	140%	7,300	- 9,650
8,518	17,180	3,294	6,210	1,030	1,100	890	750	430	310	530	11,250	132%	10,000	- 13,100
780	1,269	366												
2,417	4,400	666												
219	637	24												
291	562	32												
4,526	9,492	994	4,380	555	550	720	620	300	140	185	7,450	165%	6,770	- 8,680
564	1,056	102												
181	292	30												
379	565	98												
2,337	4,926	369	2,500	300	290	430	470	220	60	50	4,320	185%	3,910	- 5,050
616	1,234	66												
1,070	2,575	144												
318	705	59												
2,674	6,381	349	3,180	340	410	550	630	380	100	40	5,630	211%	5,070	- 6,550
378	1,253	20	610	75	82	80	55	20	5	3	930	246%	870	- 1,100
626	1,009	197												
736	1,800	129	620	85	105	150	230	180	40	10	1,420	193%	1,250	- 1,660
471	929	88												
1,131	2,952	155	980	90	135	240	350	230	80	25	2,130	188%	1,890	- 2,500
461	1,147	123												
770	1,661	258												
1,857	4,430	383	1,540	160	230	350	570	560	200	50	3,660	197%	3,330	- 4,160
461	1,020	92												
952	2,859	150	925	100	130	210	330	270	90	35	2,090	220%	1,920	- 2,400
1,337	2,964	308												
112	298	14												
248	653	71												
1,753	4,642	362	1,065	180	210	320	630	630	320	125	3,480	199%	3,100	- 4,100
284	607	58												
1,647	4,294	383	810	145	150	270	600	660	320	125	3,080	187%	2,680	- 3,600
431	1,402	92	335	70	70	100	160	140	70	25	970	225%	870	- 1,110
135	615	16	225	45	40	40	40	20	5	5	420	311%	390	- 470
558	1,577	163												
694	2,309	175	365	95	125	170	270	230	100	75	1,430	206%	1,270	- 1,800

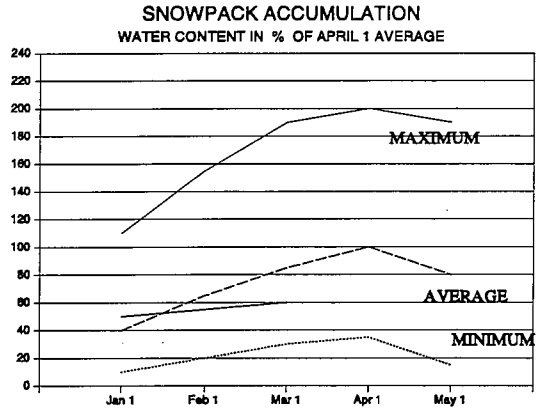
* Indicates observed runoff

APRIL 1, 1997 FORECASTS
APRIL-JULY UNIMPAIRED RUNOFF

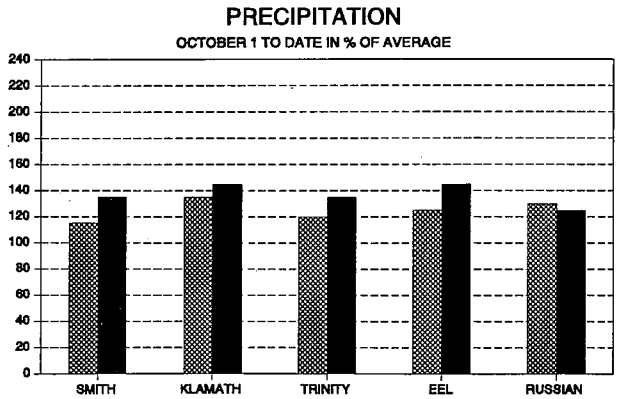
HYDROLOGIC REGION and Watershed	Unimpaired Runoff in 1,000 Acre-Feet (1)				
	HISTORICAL			FORECASTS	
	50 Yr Avg (2)	Max of Record	Min of Record	Apr-Jul Forecasts	Pct of Avg
NORTH COAST					
Trinity River					
Total Inflow to Lewiston Lake	642	1,593	80	360	56%
Scott River					
Near Fort Jones	200	N/A	N/A	110	55%
Klamath River					
Total inflow to Upper Klamath Lake (3)	422	583	277	430	102%
NORTH LAHONTAN					
Truckee River					
Lake Tahoe to Farad accretions	264	713	58	290	110%
Lake Tahoe Rise (assuming gates closed, in feet) (4)	1.5	3.8	0.2	1.7	113%
Carson River					
West Fork at Woodfords	54	135	12	65	120%
East Fork near Gardnerville	183	407	43	230	126%
Walker River					
West Fork near Coleville	143	330	35	200	140%
East Fork near Bridgeport	61	209	7	90	148%
SOUTH LAHONTAN					
Owens River					
Total tributary flow to Owens River (5)	226	579	96	283	125%

(1) See inside back cover for definition
(2) All 50 year averages are based on years 1946-1995 unless otherwise noted
(3) Forecast by U.S. Natural Resources Conservation Service, Portland Oregon, 30 year average based on years 1961-1990.
(4) 50 year average based on years 1941-1990
(5) Forecast by Department of Water and Power, City of Los Angeles

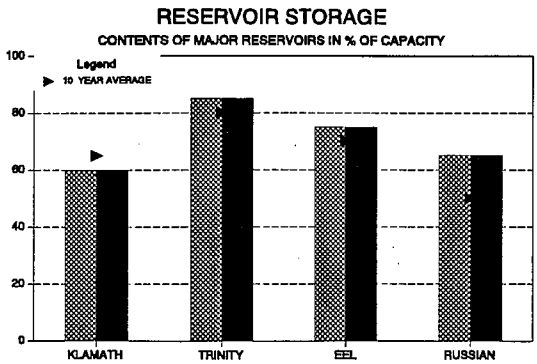
NORTH COAST REGION



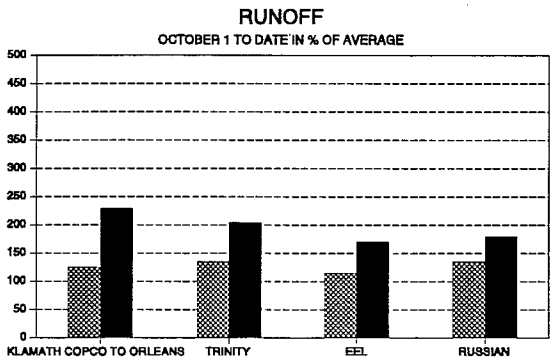
SNOWPACK - First of the month measurements made at 11 snow courses indicate an area wide snow water equivalent of 18.5 inches. This is 65 percent of the March 1 average and 60 percent of the seasonal (April 1) average. Last year at this time the pack was holding 23.3 inches of water.



PRECIPITATION - Seasonal precipitation (October 1 through the end of last month) on this area was 135 percent of normal. Precipitation last month was about 35 percent of the monthly average. Seasonal precipitation at this time last year stood at 125 percent of normal.

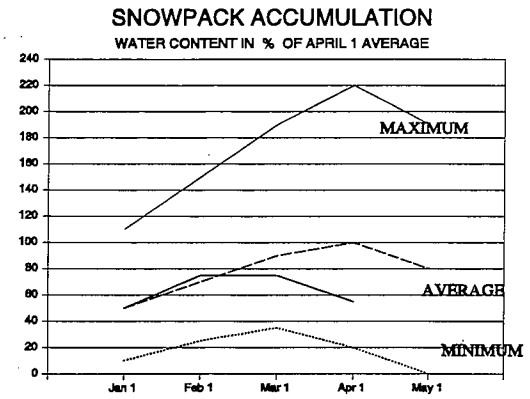


RESERVOIR STORAGE - First of the month storage in 7 reservoirs was 2.5 million acre-feet which is 110 percent of average. About 80 percent of available capacity was being used. Storage in these reservoirs at this time last year was 110 percent of average.



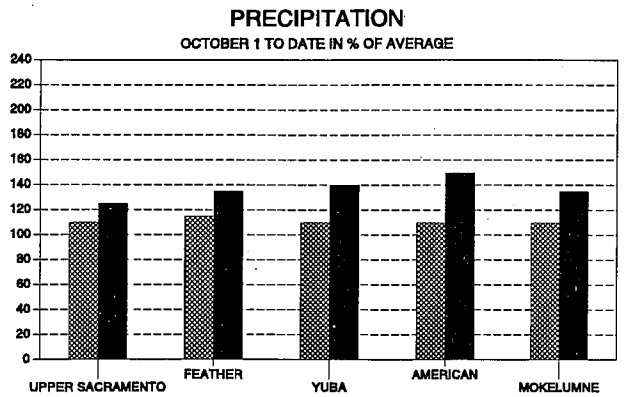
RUNOFF - Seasonal runoff of streams draining the area totaled 14.7 million acre-feet which is 190 percent of average for this period. Last year, runoff for the same period was 120 percent of average.

LAST YEAR THIS YEAR

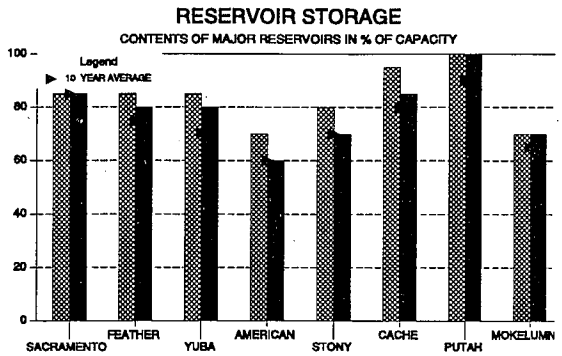


SACRAMENTO RIVER REGION

SNOWPACK - First of the month measurements made at 78 snow courses indicate an area wide snow water equivalent of 16.5 inches. This is 55 percent of the seasonal (April 1) average. Last year at this time the pack was holding 26.2 inches of water.

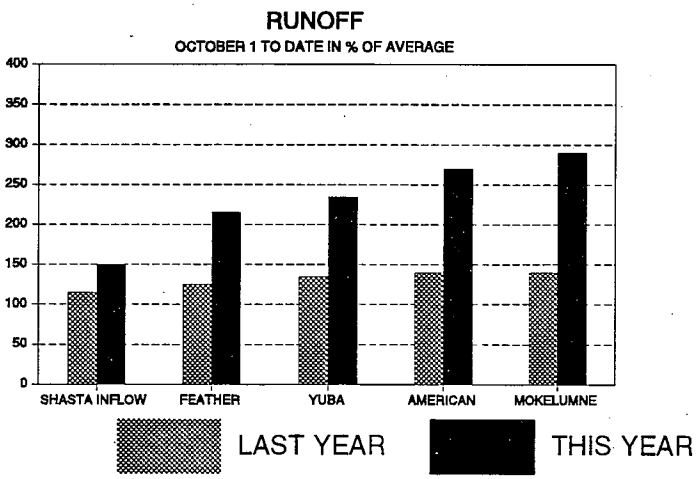


PRECIPITATION - Seasonal precipitation (October 1 through the end of last month) on this area was 130 percent of normal. Precipitation last month was about 40 percent of the monthly average. Seasonal precipitation at this time last year stood at 120 percent of normal.



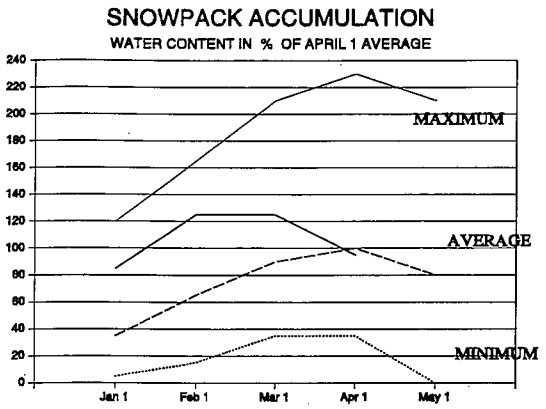
RESERVOIR STORAGE - First of the month storage in 43 reservoirs was 13 million acre-feet which is 105 percent of average. About 80 percent of available capacity was being used. Storage in these reservoirs at this time last year was 110 percent of average.

RUNOFF - Seasonal runoff of streams draining the area totaled 20.3 million acre-feet which is 185 percent of average for this period. Last year, runoff for the same period was 120 percent of average.

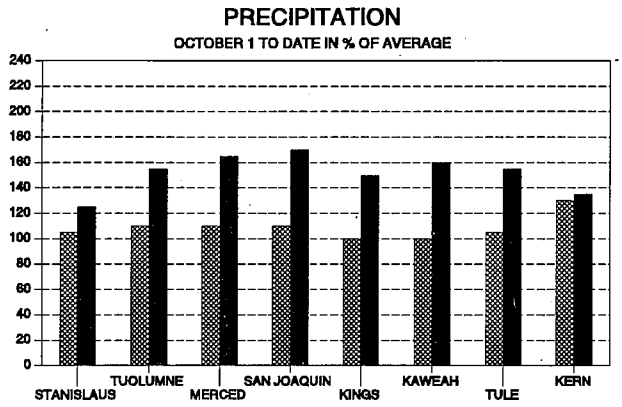


The Sacramento River Region 40-30-30 Water Supply Index is forecasted to be 11.3 million acre-feet assuming median meteorological conditions for the remainder of the year. This classifies the year as "wet" in the Sacramento-San Joaquin Delta according to the State Water Resources Control Board.

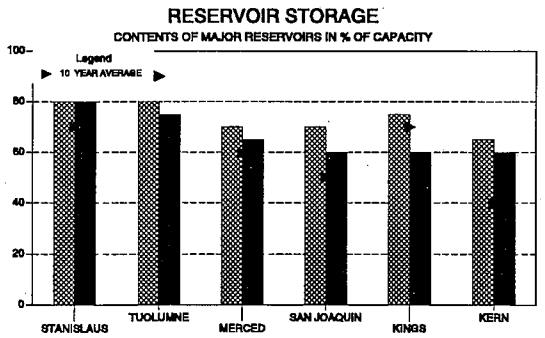
SAN JOAQUIN RIVER AND TULARE LAKE REGIONS



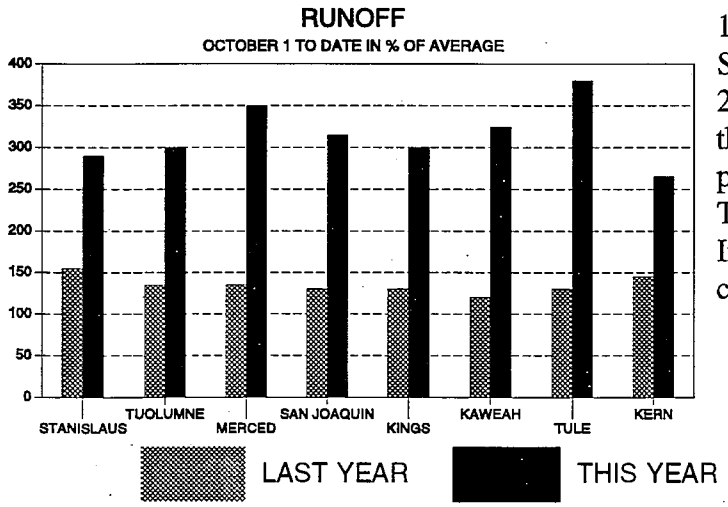
SNOWPACK - First of the month measurements made at 64 San Joaquin River Region snow courses indicate an area wide snow water equivalent of 33.6 inches. This is 100 percent of the seasonal (April 1) average. Last year at this time the pack was holding 29.6 inches of water.
At the same time, 46 Tulare Lake Region snow courses indicated a basin-wide snow water equivalent of 21.7 inches which is 95 percent of the seasonal average. Last year at this time, the Region was holding 23.1 inches of water.



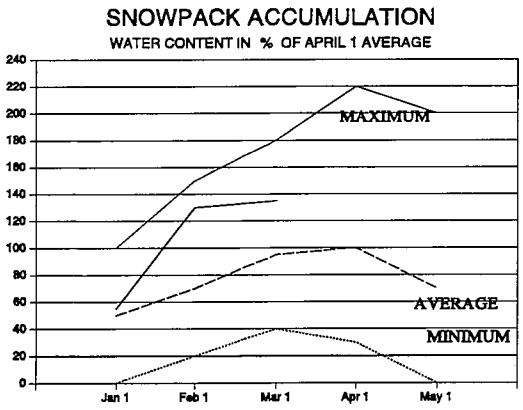
PRECIPITATION - Seasonal precipitation (October 1 through the end of last month) on the San Joaquin River Region was 150 percent of normal. Precipitation last month was about 5 percent of the monthly average. Seasonal precipitation at this time last year stood at 110 percent of normal.
Seasonal precipitation on the Tulare Lake Region was 145 percent of normal. Precipitation last month was 5 percent of the monthly average. Seasonal precipitation at this time last year stood at 110 percent of normal.

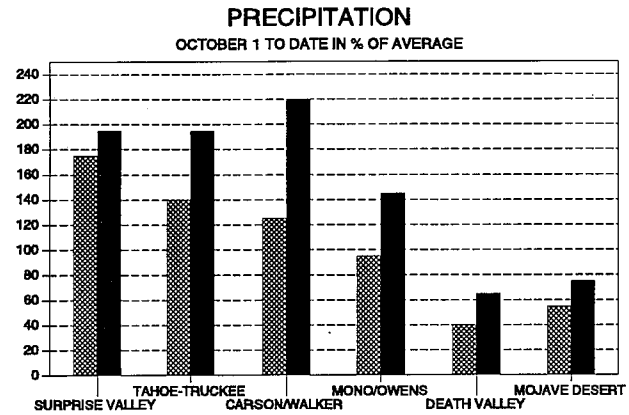


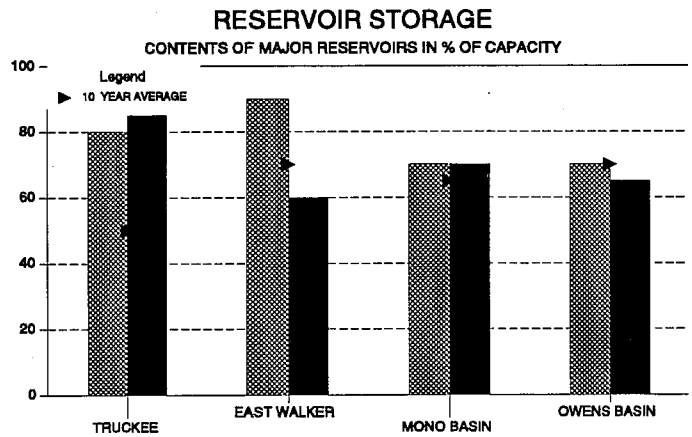
RESERVOIR STORAGE - First of the month storage in 33 San Joaquin River Region reservoirs was 8.7 million acre-feet which is 125 percent of average and about 75 percent of available capacity. Storage in these reservoirs at this time last year was 130 percent of average.
First of the month storage in 6 Tulare Lake Region reservoirs was 1.2 million acre-feet which is 145 percent of average. About 60 percent of available capacity was being used. Storage in these reservoirs at this time last year was 165 percent of average.

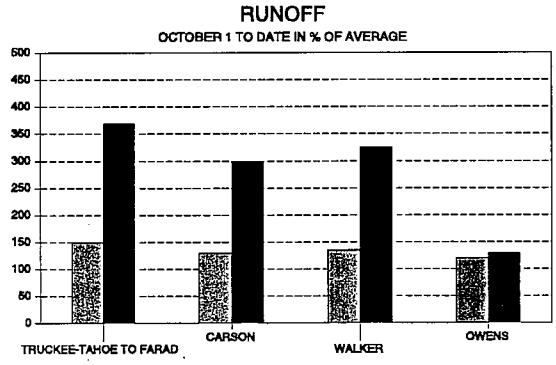


RUNOFF - Seasonal runoff of streams draining the area totaled 7.2 million acre-feet which is 305 percent of average for this period. Last year, runoff for the same period was 135 percent of average.
Stream runoff draining into the Tulare Lake Basin totaled 2.5 million acre-feet which is 300 percent of average for this period. Last year, runoff for this same period was 130 percent of average.
The San Joaquin River Region 60-20-20 Water Supply Index is forecasted to be 4.6 million acre-feet which classifies the year as "wet".









LAST YEAR THIS YEAR

NORTH AND SOUTH LAHONTAN REGIONS

SNOWPACK - First of the month measurements made at 15 North Lahontan snow courses indicate an area wide snow water equivalent of 40.1 inches. This is 145 percent of the March 1 average and 125 percent of the seasonal (April 1) average. Last year at this time the pack was holding 26.6 inches of water.

At the same time, 20 South Lahontan snow courses indicated a basin-wide snow water equivalent of 34.7 inches which is 170 percent of the average for March 1 and 145 percent of the seasonal average. Last year at this time, the pack was holding 25.6 inches of water.

PRECIPITATION - Seasonal precipitation (October 1 through the end of last month) on the North Lahontan Region was 205 percent of normal. Precipitation last month was about 20 percent of the monthly average. Seasonal precipitation at this time last year stood at 140 percent of normal.

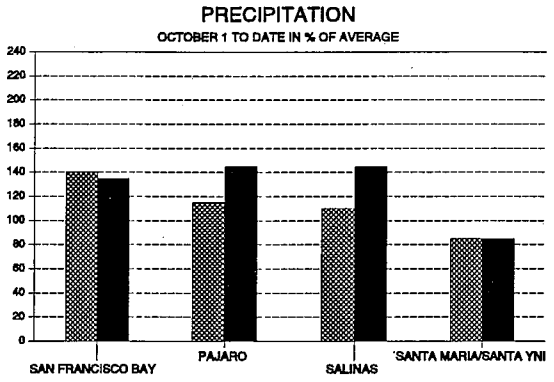
Seasonal precipitation on the South Lahontan Region was 105 percent of normal. Precipitation last month was 5 percent of the monthly average. Seasonal precipitation at this time last year stood at 60 percent of normal.

RESERVOIR STORAGE - First of the month storage in 5 North Lahontan Region reservoirs was 904 thousand acre-feet which is 155 percent of average. About 85 percent of available capacity was being used. Storage in these reservoirs at this time last year was 145 percent of average. Lake Tahoe was 5.2 feet above its natural rim on March 1. First of the month storage in 8 South Lahontan Region reservoirs was 226 thousand acre-feet which is 80 percent of average. About 55 percent of available capacity was being used. Storage in these reservoirs at this time last year was 95 percent of average.

RUNOFF - Seasonal runoff of streams draining the North Lahontan area totaled 702 thousand acre-feet which is 340 percent of average for this period. Last year, runoff for the same period was 140 percent of average.

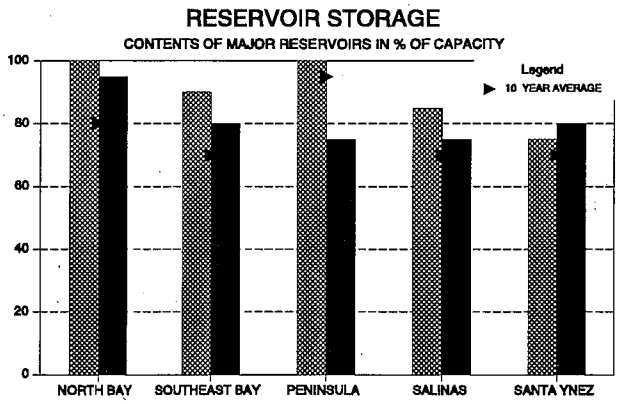
Seasonal runoff of the Owens River in the South Lahontan Region totaled 73 thousand acre-feet which is 130 percent of average for this period. Last year, runoff for this same period was 120 percent of average.

SAN FRANCISCO BAY AND CENTRAL COAST REGIONS



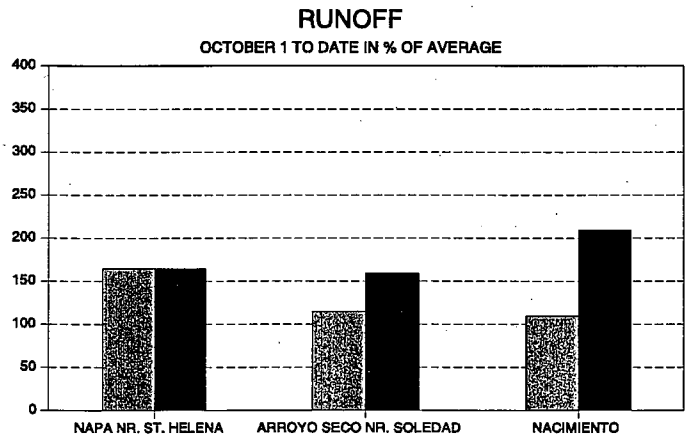
PRECIPITATION - Seasonal precipitation (October 1 through the end of last month) on the San Francisco Bay area was 135 percent of normal. Precipitation last month was about 20 percent of the monthly average. Seasonal precipitation at this time last year stood at 140 percent of normal.

Seasonal precipitation on the Central Coast area was 130 percent of normal. Precipitation last month was 5 percent of the monthly average. Seasonal precipitation at this time last year stood at 100 percent of normal.



RESERVOIR STORAGE - First of the month storage in 18 major Bay area reservoirs was 567 thousand acre-feet which is 110 percent of average. About 80 percent of available capacity was being used. Storage in these reservoirs at this time last year was 125 percent of average.

First of the month storage in 6 major Central Coast reservoirs was 745 thousand acre-feet which is 110 percent of average. About 80 percent of available capacity was being used. Storage in these reservoirs at this time last year was 115 percent of average.



RUNOFF - Seasonal runoff of the Napa River in the San Francisco Bay area totaled 104 thousand acre-feet which is 165 percent of average for this period. Last year, runoff for the same period was 165 percent of average.

Seasonal runoff of selected Central Coast streams totaled 541 thousand acre-feet, which is 195 percent of average for this period. Last year, runoff for this same period was 110 percent of average.

LAST YEAR THIS YEAR

SOUTH COAST AND COLORADO RIVER AREAS

PRECIPITATION - October through February (seasonal) precipitation on the South Coast area was 115 percent of normal. February precipitation was 15 percent of the monthly average. Seasonal precipitation at this time last year was 75 percent of normal.
Seasonal precipitation on the Colorado Desert area was 65 percent of normal. Precipitation in February was 15 percent of average. Seasonal precipitation at this time last year stood at 20 percent of average.
RESERVOIR STORAGE - March 1 storage in 29 major South Coast area reservoirs was 1.5 million acre-feet or 120 percent of average. About 75 percent of available capacity was being used. Storage in these reservoirs at this time last year was 125 percent of average.
On March 1 combined storage in Lakes Powell, Mead, Mohave and Havasu was about 44 million acre-feet or about 115 percent of average. About 80 percent of available capacity was in use. Last year at this time, these reservoirs were storing 120 percent of average.
RUNOFF - Seasonal runoff from selected South Coast streams totaled 35 thousand acre-feet which is 115 percent of average. Runoff from these streams during February totaled 7 thousand acre-feet or 60 percent of average. Seasonal runoff from these streams last year was 115 percent of average.
COLORADO RIVER - The February 1 snowpack in the Upper Colorado River basin according to U.S. Natural Resources Conservation Service reports was 145 percent of average, highest in the Duschesne at 150 percent and lowest in the Roaring Fork at 115 percent.

The April through July inflow to Lake Powell is forecast to be 12.5 million acre-feet, which is 162 percent of average.

CENTRAL VALLEY PROJECT

Based on March 1 conditions, Bureau of Reclamation April-July forecasts for runoff into CVP reservoirs are: Trinity--90% of average, Shasta--111% of average, American--129% of average, Stanislaus--124% of average, San Joaquin above Friant--150% of average. As of February 28, 1997 CVP storage was 9.0 million acre feet which is a decrease of approximately 0.1 million acre feet compared to one year ago, and is approximately 122% of the average for that date.

The Bureau of Reclamation announced updated water allocations for the CVP on February 14, 1996. Agricultural contractors received 100% of their contract supply; urban contractors received 100% supplies. Wildlife refuges received 100% of level II supplies. Sacramento River water rights settlement contractors received 100% supplies, and San Joaquin Exchange contractors were allocated 100% supplies. Friant Division allocations were held at 100% Class I, and 60% Class II supplies.

STATE WATER PROJECT

Despite a dry February, the general wetness in California this winter has allowed State Water Project deliveries to be approved at 2.98 million acre-feet. This amount is either 100 percent of each water contractor's "Table A" entitlement or 100 percent of their request for 1997, whichever is less.

MAJOR WATER DISTRIBUTION PROJECTS

RESERVOIR STORAGE

(AVERAGES BASED ON PERIOD RECORD)

RESERVOIR	CAPACITY 1,000 AF	AVERAGE STORAGE 1,000 AF	STORAGE AT END OF MARCH 1996 1,000 AF	1997 1,000 AF	PERCENT AVERAGE	PERCENT CAPACITY
STATE WATER PROJECT						
Lake Oroville	3,538	2,817	2,985	2,962	105%	84%
San Luis Reservoir (SWP)	1,062	972	1,059	1,085	112%	102%
Lake Del Valle	77	37	40	39	104%	50%
Lake Silverwood	73	67	39	34	51%	46%
Pyramid Lake	171	159	166	161	101%	94%
Castaic Lake	324	283	302	291	103%	90%
Perris Lake	132	116	124	117	101%	89%
CENTRAL VALLEY PROJECT						
Clair Engle Lake	2,448	1,993	2,170	2,112	106%	86%
Lake Shasta	4,552	3,774	3,883	3,800	101%	83%
Whiskeytown Lake	241	213	209	204	96%	85%
Folsom Lake	977	636	627	470	74%	48%
New Melones Reservoir	2,420	1,538	2,049	2,022	131%	84%
Millerton Lake	520	307	505	275	90%	53%
San Luis Reservoir (CVP)	971	827	965	924	112%	95%
COLORADO RIVER PROJECT						
Lake Mead	26,159	19,651	22,031	22,786	116%	87%
Lake Powell	25,002	14,946	20,220	18,918	127%	76%
Lake Mohave	1,810	1,639	1,632	1,727	105%	95%
Lake Havasu	619	548	527	550	100%	89%
EAST BAY MUNICIPAL UTILITY DISTRICT						
Pardee Reservoir	198	179	203	176	98%	89%
Camanche Reservoir	417	260	226	230	89%	55%
East Bay (4 reservoirs)	151	132	143	118	90%	78%
CITY AND COUNTY OF SAN FRANCISCO						
Hetch-Hetchy Reservoir	360	123	242	226	183%	63%
Cherry Lake	268	109	233	187	171%	70%
Lake Eleanor	26	10	25	25	246%	98%
South Bay/Peninsula (4 reservoirs)	225	175	223	188	107%	84%
CITY OF LOS ANGELES (D.W.P.)						
Lake Crowley	183	131	127	120	92%	66%
Grant Lake	48	29	44	46	159%	96%
Other Aqueduct Storage (6 res.)	83	77	63	57	74%	69%

TELEMETERED SNOW WATER EQUIVALENTS

MARCH 1, 1997

(AVERAGES BASED ON PERIOD RECORD)

BASIN NAME / STATION NAME	ELEV	APRIL 1 AVERAGE	INCHES OF WATER EQUIVALENT MAR 1	PERCENT OF AVERAGE	24 HRS PREVIOUS	1 WEEK PREVIOUS
TRINITY RIVER						
Peterson Flat	7150'	29.2	21.0	72%	20.8	21.8
Red Rock Mountain	6700'	39.6	28.1	71%	28.1	26.1
Bonanza King	6450'	40.5	19.1	47%	19.1	19.1
Shimmy Lake	6200'	40.3	—	—	—	—
Middle Boulder 3	6200'	28.3	10.5	37%	10.5	11.8
Highland Lakes	6030'	29.9	15.8	53%	15.6	15.6
Scott Mountain	5900'	16.0	11.0	69%	11.0	11.9
Mumbo Basin	5700'	22.4	16.2	72%	15.8	16.8
Big Flat	5100'	15.8	5.9	37%	5.6	4.2
SACRAMENTO RIVER						
Cedar Pass	7100'	18.1	18.8	104%	18.6	17.7
Blacks Mountain	7100'	12.7	10.0	79%	9.9	9.4
Sand Flat	6750'	42.4	29.9	71%	29.7	29.3
Medicine Lake	6700'	32.6	11.2	34%	11.0	11.0
Adin Mountain	6350'	13.6	9.8	72%	9.8	9.9
Snow Mountain	5950'	27.0	—	—	—	—
Slate Creek	5600'	29.0	6.5	22%	6.5	7.1
Stouts Meadow	5400'	36.0	—	—	—	—
FEATHER RIVER						
Kettle Rock	7300'	25.5	19.1	75%	19.1	19.3
Grizzly Ridge	6900'	29.7	31.9	107%	31.9	31.3
Pilot Peak (DWR)	6800'	52.6	34.9	66%	33.8	33.2
Gold Lake	6750'	36.5	34.4	94%	34.4	34.3
Humbug	6500'	28.0	28.4	102%	28.3	28.7
Rattlesnake	6100'	14.0	15.8	113%	15.8	15.5
Bucks Lake	5750'	44.7	15.8	35%	15.8	15.8
Four Trees	5150'	20.0	8.0	40%	8.2	8.9
EEL RIVER						
Noel Spring	5100'	—	0.7	—	0.6	1.2
Plaskett Meadows	6000'	—	13.4	—	13.8	14.6
YUBA & AMERICAN RIVERS						
Lake Lois	8800'	39.5	—	—	—	—
Schneiders	8750'	34.5	53.7	156%	53.7	53.8
Caples Lake (DWR)	7800'	30.9	34.8	113%	34.7	34.0
Alpha	7600'	35.9	39.5	110%	39.6	39.0
Beta	7600'	35.9	34.1	95%	34.1	33.8
Forni Ridge	7600'	37.0	24.4	66%	24.2	24.2
Silver Lake (DWR)	7100'	22.7	27.7	122%	27.2	26.5
Central Sierra Snow Lab	6950'	33.6	47.2	140%	47.0	46.5
Huysink	6600'	42.6	34.1	80%	34.1	33.9
Van Vleck	6700'	35.9	45.1	126%	45.1	44.7
Robbs Saddle	5900'	21.4	29.6	138%	29.3	29.0
Greek Store	5600'	21.0	21.6	103%	21.6	21.5
Blue Canyon	5280'	9.0	0.6	7%	0.8	1.6
Robbs Powerhouse	5150'	5.2	8.1	156%	8.1	8.3
MOKELUMNE & STANISLAUS RIVERS						
Deadman Creek	9250'	37.2	36.6	98%	36.6	37.4
Highland Meadow	8800'	47.9	65.0	136%	65.0	64.0
Gianelli Meadow	8350'	55.5	59.3	107%	59.3	59.3
Lower Relief Valley	8100'	41.2	52.1	126%	52.1	51.4
Blue Lakes	8000'	33.1	36.8	111%	36.8	36.9
Mud Lake	7900'	44.9	68.3	152%	68.2	67.5
Stanislaus Meadow	7750'	47.5	56.6	119%	57.0	57.8
Bloods Creek	7200'	35.5	39.0	110%	38.9	38.3
Black Springs	6500'	32.0	23.0	72%	22.9	23.9
TUOLUMNE & MERCED RIVERS						
Dana Meadows	9800'	27.7	40.0	144%	40.0	40.0
Slide Canyon	9200'	41.1	57.6	140%	57.6	57.6
Snow Flat	8700'	44.1	—	—	—	—
Tuolumne Meadows	8600'	22.6	33.0	146%	33.0	33.5
Horse Meadow	8400'	48.6	—	—	—	—
Ostrander Lake	8200'	34.8	47.1	135%	47.1	47.1
Paradise Meadow	7650'	41.3	—	—	—	—
Gin Flat	7050'	34.2	36.0	105%	36.0	35.5
Lower Kibbie Ridge	6600'	27.4	27.1	99%	27.1	27.1

TELEMETERED SNOW WATER EQUIVALENTS

APRIL 1, 1997

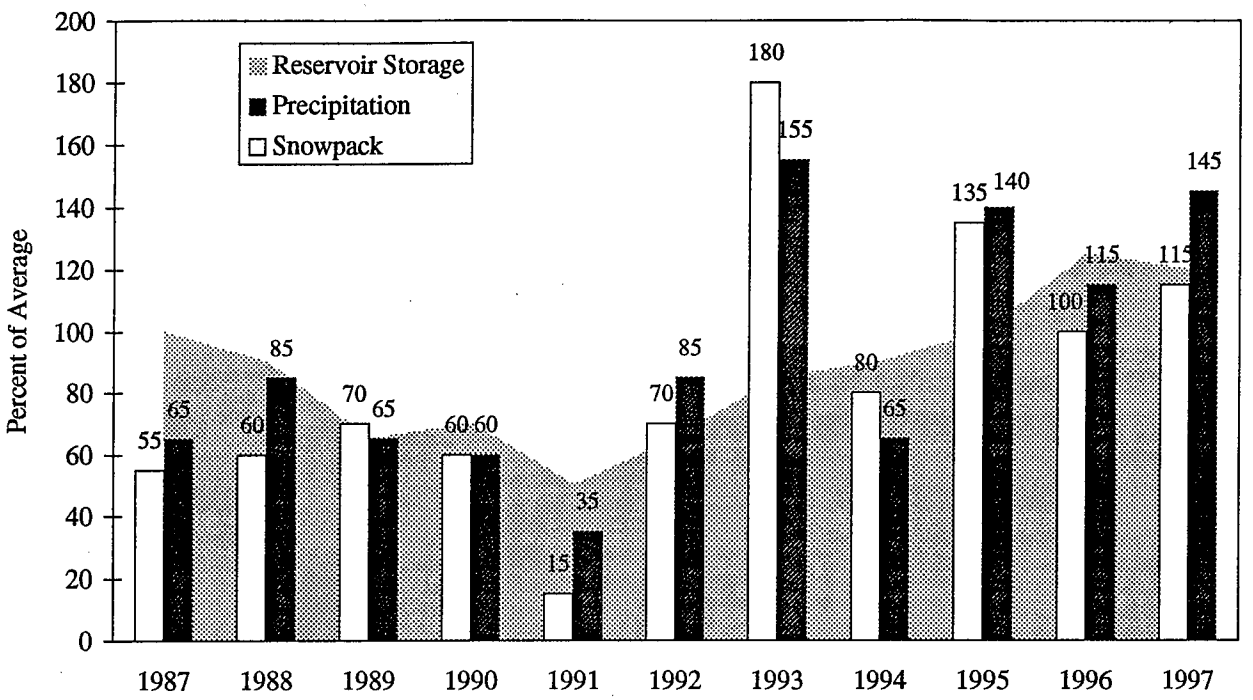
(AVERAGES BASED ON PERIOD RECORD)

BASIN NAME / STATION NAME	ELEV	APRIL 1 AVERAGE	INCHES OF WATER EQUIVALENT APR 1	PERCENT OF AVERAGE	24 HRS PREVIOUS	1 WEEK PREVIOUS
SAN JOAQUIN RIVER						
Volcanic Knob	10100'	30.1	—	—	—	—
Agnew Pass	9450'	32.3	—	—	—	—
Kaiser Point	9200'	37.8	—	—	—	—
Green Mountain	7900'	30.8	32.7	106%	33.1	36.0
Tamarack Summit	7600'	30.5	23.6	77%	23.6	27.0
Chilkoot Meadow	7150'	38.0	29.5	78%	29.5	29.5
Huntington Lake (USBR)	7000'	20.1	18.5	92%	18.1	—
Graveyard Meadow	6900'	18.8	16.9	90%	16.9	20.5
Poison Ridge	6900'	28.9	9.3	32%	9.3	14.1
KINGS RIVER						
Bishop Pass	11200'	34.0	27.6	81%	27.6	30.8
Charlotte Lake	10400'	27.5	36.8	134%	36.6	37.8
State Lakes	10400'	29.0	28.3	98%	28.3	—
Mitchell Meadow	10375'	32.9	36.5	111%	36.5	—
Blackcap Basin	10300'	34.3	—	—	—	—
Upper Burnt Corral	9700'	34.6	46.0	133%	46.0	47.7
West Woodchuck Meadow	9100'	32.8	42.0	128%	42.2	46.2
Big Meadows (DWR)	7600'	25.9	23.7	92%	23.7	—
KAWEAH & TULE RIVERS						
Quaking Aspen	7200'	21.0	11.8	56%	12.6	16.7
Giant Forest (Corps)	6400'	10.0	0.0	0%	0.0	0.0
KERN RIVER						
Upper Tyndall Creek	11500'	27.7	40.7	147%	41.4	45.1
Crabtree Meadow	10700'	19.8	20.5	104%	20.5	20.5
Chagoopa Plateau	10300'	21.8	29.8	137%	29.2	29.2
Pascoes	9150'	24.9	26.9	108%	26.9	30.8
Tunnel Guard Station	8950'	15.6	13.4	86%	13.4	16.6
Wet Meadows	8900'	30.3	18.9	62%	19.0	21.6
Casa Vieja Meadows	8400'	20.9	17.6	84%	18.3	19.6
Beach Meadows	7650'	11.0	0.0	0%	0.0	0.0
SURPRISE VALLEY AREA						
Dismal Swamp	7050'	29.2	33.2	114%	33.1	34.4
TRUCKEE RIVER						
Mount Rose Ski Area	8850'	38.5	48.1	125%	48.4	47.7
Independence Lake (NRCS)	8450'	41.4	55.3	134%	55.1	53.9
Big Meadows (NRCS)	8700'	25.7	26.8	104%	27.0	28.0
Independence Camp	7000'	21.8	9.7	44%	9.7	9.6
Independence Creek	6500'	12.7	10.9	86%	9.6	11.3
LAKE TAHOE BASIN						
Heavenly Valley	8800'	28.1	29.4	105%	29.3	30.5
Hagans Meadow	8000'	16.5	14.0	85%	13.5	15.6
Marlette Lake	8000'	21.1	26.2	124%	26.1	26.0
Echo Peak 5	7800'	39.5	41.9	106%	41.9	46.0
Rubicon Peak 2	7500'	29.1	28.2	97%	28.1	29.2
Ward Creek 3	6750'	39.4	31.8	81%	31.6	34.3
Fallen Leaf Lake	6300'	7.0	0.0	0%	0.0	0.0
CARSON RIVER						
Ebbetts Pass	8700'	38.8	46.5	120%	46.5	47.3
Poison Flat	7900'	16.2	13.5	83%	13.5	13.8
WALKER RIVER						
Virginia Lakes	9200'	20.3	26.7	132%	26.5	25.9
Lobdell Lake	9200'	17.3	25.0	145%	24.3	26.2
Sonora Pass Bridge	8750'	26.0	37.4	144%	37.2	37.2
Leavitt Meadows	7200'	8.0	4.6	57%	4.7	8.1
OWENS RIVER/MONO LAKE						
Gem Pass	10750'	31.7	45.7	144%	45.1	47.0
Sawmill	10300'	19.4	—	—	—	24.2
Cottonwood Lakes	10200'	11.6	14.9	128%	15.0	18.0
Big Pine Creek	9800'	17.9	17.0	95%	15.7	16.3
South Lake	9600'	16.0	22.9	143%	22.4	23.4
Mammoth Pass (USBR)	9500'	42.4	47.2	111%	47.2	49.6
Rock Creek Lakes	10000'	14.0	13.6	97%	13.8	15.7

NORMAL SNOWPACK ACCUMULATION EXPRESSED AS A PERCENT OF APRIL 1ST AVERAGE

AREA	JANUARY	FEBRUARY	MARCH	APRIL	MAY
Central Valley North	45%	70%	90%	100%	75%
Central Valley South	45%	65%	85%	100%	80%
North Coast	40%	60%	85%	100%	80%

March 1 Statewide Conditions



SNOWLINES

SNOW SURVEYS assisted in its first ever hazardous waste spill. DWR personnel from Sacramento and Beckworth, as well Forest Service gaugers helped map a diesel fuel spill at Norden and a petroleum product leak from a pipeline break into Summit Creek, both located near Truckee. The sampling sets proved to be ideal at quickly obtaining snow cores, including soil, from which the extent of the spread of the contamination could be determined.

SAMPLING CONDITIONS for the March 1 survey were some of the worst encountered in recent memory. Many of the courses had an impenetrable ice layer at the ground surface. This layer will not only effect the manual measurements but impede the snow sensors ability to accurately measure the water content as well. As the sun pumps more energy into the pack this ice layer will disappear and the sensor readings will suddenly increase at many of the locations..

THE AGENDA for the joint meeting of the Western Snow Conference with the Eastern Snow Conference and the Canadian Geophysical Union in Banff, Alberta Canada has not been published. The deadline for abstract submission was March 1 and the overall meeting dates are May 4-8. Whether the sessions for the WSC will be throughout that week or concentrated in three days isn't known. For further information try http://www.geo.ucalgary.ca/~wu/cguconf.html or contact Frank Gehrke at 916-574-2635.

SNOWPACK - Snow data is a major index of spring and summer runoff from Sierra Nevada watersheds. April 1 data historically reflects the magnitude of the snowpack at or near the maximum seasonal accumulation. Averages are based on April 1 data for the period 1946-1995 (50 years, except for data sites established after 1941).

PRECIPITATION - Averages are based on April 1 data for the period 1946-1995 (50 years, except for data sites established after 1941).

RUNOFF AND FORECASTS - Runoff data and runoff forecasts are shown as unimpaired values. Unimpaired runoff represents the natural water production of a river basin, unaltered by upstream diversions, storage, or by export or import of water to or from other watersheds. Forecast of runoff assumes median conditions subsequent to the date of forecast.

Runoff probability ranges are statistically derived from historical data. The 80 percent probability range is comprised of the 90 percent exceedence level value and the 10 percent exceedence level value. This means that actual runoff should fall within the stated limits eight times out of ten.

Runoff averages for most streams are based on the period 1946-1995. For more details contact California Cooperative Snow Surveys, P.O. Box 942836, Sacramento, CA 94236-0001, (916) 574-2635 or gridley@water.ca.gov.

INDICES OF WATER AVAILABILITY

The Sacramento River Hydrologic Region 40-30-30 Water Supply Index. The *40-30-30* represent the percentage weight given to the three variables in the formula for the index. The first variable is the forecasted unimpaired runoff from April through July (*40 Percent*). The second variable is the forecasted unimpaired runoff from October through March (*30 Percent*). The third variable is the previous year's index with a cap to account for required flood control releases during wet years. The basins used in this computation are those used in the Sacramento River water year unimpaired runoff.

The Sacramento River water year unimpaired runoff is the sum of: Sacramento River above Bend Bridge, Feather River Inflow to Lake Oroville, Yuba River near Smartville and American River Inflow to Folsom Lake.

The San Joaquin River Hydrologic Region 60-20-20 Water Supply Index. In a similar manner, the *60-20-20* represents the percentage weights on April through July runoff, October through March runoff and previous year's index. The San Joaquin River unimpaired runoff is the sum of: Stanislaus River Inflow to New Melones Lake, Tuolumne River Inflow to New Don Pedro Reservoir, Merced River Inflow to Lake McClure and San Joaquin River Inflow to Millerton Lake.

Prior month unimpaired runoff is the sum of the runoff in the eight major rivers used in the two above indices.

Intersection of Wrights Lake Road and Highway 50 following debris flow during the 1997 floods. The flow started almost at the top of the ridge, approximately 1500 vertical feet above Highway 50.

Photo by Dave Hart, DWR

State of California – The Resources Agency
DEPARTMENT OF WATER RESOURCES
P.O. Box 942836
Sacramento, CA 94236-0001

First Class